

### Claims

#### Claims 1-58 (Canceled)

59. (Currently amended) A method of reversibly sterilizing a mammal, comprising providing a polymeric compound comprising a methacrylamide derivative and a hydrophilic comonomer, that remains a solution until exposed to critical minimum values of at least two environmental stimuli, wherein the polymeric compound forms a gel upon exposure to the critical minimum values of the at least two environmental stimuli;

delivering the polymeric compound to a lumen or other body region in need of closure when the polymeric compound is a solution; and

exposing the polymeric compound to the critical minimum values of the at least two environmental stimuli such that the polymeric compound forms a gel in situ in the lumen or other body region resulting in reversible sterilization of the mammal.

60. (Previously presented) The method of claim 59, wherein the sterilization of the mammal is reversed when one of the at least two environmental stimuli falls below the critical minimum value.

61. (Previously presented) The method of claim 59, wherein the exposing the polymeric compound to the critical minimum values of the at least two environmental stimuli comprises exposing the polymeric compound to at least two environmental stimuli selected from the group consisting of temperature, pH, ionic strength, electrical field, magnetic field, solvent composition, light, pressure and chemical composition of the ambient environment.

62. (Currently amended) A method for sterilizing a male mammal wherein the sterilization is reversible, comprising:

delivering a polymeric compound comprising a methacrylamide derivative and a hydrophilic comonomer, that remains a solution until exposed to critical minimum values of at least two environmental stimuli, and forms a gel upon exposure to the critical minimum values of the at least two environmental stimuli, to vas deferens of the male mammal when the polymeric compound is a solution; and

exposing the polymeric compound to the critical minimum values of the at least two environmental stimuli such that the polymeric compound forms a gel in situ in the vas deferens thereby reversibly sterilizing the male mammal.

63. (Previously presented) The method of claim 62, wherein the sterilization of the mammal is reversed when one of the at least two environmental stimuli falls below the critical minimum value.

Claims 64 - 68 (Canceled)